

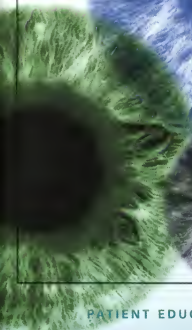
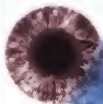


AMERICAN ACADEMY  
OF OPHTHALMOLOGY

*The Eye M.D. Association*

# Macular Degeneration

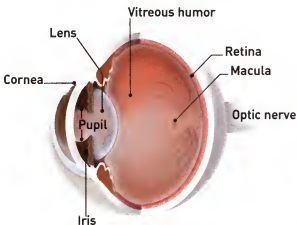
## A Closer Look



PATIENT EDUCATION

## What is macular degeneration?

Macular degeneration is a deterioration or breakdown of the macula. The macula is a small area in the retina at the back of the eye that allows you to see fine details clearly and perform activities such as reading and driving. When the macula does not function correctly, your central vision can be affected by blurriness, dark areas or distortion. Macular degeneration affects your ability to see near and far, and can make some activities—like threading a needle or reading—difficult or impossible.



Although macular degeneration reduces vision in the central part of the retina, it usually does not affect the eye's side, or peripheral, vision. For example, you could see the outline of a clock but not be able to tell what time it is.

Macular degeneration alone does not result in total blindness. Even in more advanced cases, people continue to have some useful vision and are often able to take care of themselves. In

many cases, macular degeneration's impact on your vision can be minimal.

## **What causes macular degeneration?**

Many older people develop macular degeneration as part of the body's natural aging process. There are different kinds of macular problems, but the most common is age-related macular degeneration (AMD). Exactly why it develops is not known, and no treatment has been uniformly effective. Macular degeneration is the leading cause of severe vision loss in Caucasians over 65.

The two most common types of AMD are "dry" (atrophic) and "wet" (exudative):

### **"DRY" MACULAR DEGENERATION (ATROPHIC)**

Most people have the "dry" form of AMD. It is caused by aging and thinning of the tissues of the macula. Vision loss is usually gradual.

### **"WET" MACULAR DEGENERATION (EXUDATIVE)**

The "wet" form of macular degeneration accounts for about 10% of all AMD cases. It results when abnormal blood vessels form underneath the retina at the back of the eye. These new blood vessels leak fluid or blood and blur central vision. Vision loss may be rapid and severe.

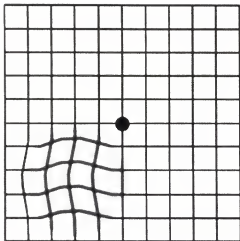
Deposits under the retina called drusen are a common feature of macular degeneration. Drusen alone usually do not cause vision loss, but when they increase in size or number, this generally indicates an increased risk of developing advanced AMD. People at risk for developing advanced AMD have significant drusen, prominent dry AMD, or abnormal blood vessels under the macula in one eye (“wet” form).

## What are the symptoms of macular degeneration?

Macular degeneration can cause different symptoms in different people. The condition may be hardly noticeable in its early stages. Sometimes only one eye loses vision while the other eye continues to see well for many years. But when both eyes are affected, the loss of central vision may be noticed more quickly.

Following are some common ways vision loss is detected:

- words on a page look blurred;
- a dark or empty area appears in the center of vision;
- straight lines look distorted, as in the following diagram.



Amsler grid with wavy lines

## How is macular degeneration diagnosed?

Many people do not realize that they have a macular problem until blurred vision becomes obvious. Your ophthalmologist (Eye M.D.) can detect early stages of AMD during a medical eye examination that includes the following:

- a simple vision test in which you look at a chart that resembles graph paper (Amsler grid);
- viewing the macula with an ophthalmoscope;
- taking special photographs of the eye called fluorescein angiography to find abnormal blood vessels under the retina.

(over)

## How is macular degeneration treated?

### **NUTRITIONAL SUPPLEMENTS**

Although the exact causes of macular degeneration are not fully understood, antioxidant vitamins and zinc may reduce the impact of AMD in some people.

A large scientific study found that people at risk for developing advanced stages of AMD lowered their risk by about 25% when treated with a high-dose combination of vitamin C, vitamin E, beta carotene and zinc. Among those who have either no AMD or very early AMD, the supplements did not appear to provide an apparent benefit.

It is very important to remember that vitamin supplements are not a cure for AMD, nor will they restore vision that you may have already lost from the disease. However, specific amounts of these supplements do play a key role in helping some people at high risk for advanced AMD to maintain their vision. You should speak with your ophthalmologist to determine if you are at risk for developing advanced AMD, and to learn if supplements are recommended for you.

### **LASER SUGERY, PDT AND ANTI-VEGF TREATMENTS**

Certain types of “wet” macular degeneration can be treated with laser surgery, a brief

outpatient procedure that uses a focused beam of light to slow or stop leaking blood vessels that damage the macula. A treatment called photodynamic therapy (PDT) uses a combination of a special drug and laser treatment to slow or stop leaking blood vessels.

Another form of treatment targets a specific chemical in your body that is critical in causing abnormal blood vessels to grow under the retina. That chemical is called vascular endothelial growth factor (VEGF). Anti-VEGF drugs block the trouble-causing VEGF, reducing the growth of abnormal blood vessels and slowing their leakage.

These procedures may preserve more sight overall, though they are not cures that restore vision to normal. Despite advanced medical treatment, many people with macular degeneration still experience some vision loss. Early detection and treatment may minimize vision loss.

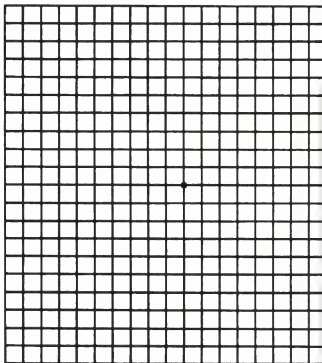
## Adapting to low vision

To help you adapt to lower vision levels, your ophthalmologist can prescribe optical devices or refer you to a low-vision specialist or center. A wide range of support services and rehabilitation programs are also available to help people with macular degeneration maintain a satisfying lifestyle. Because side vision is usually not affected, a person's remaining sight is very useful. Often, people can continue with many of their favorite activities by using low-vision optical devices

such as magnifying devices, closed-circuit television, large-print reading materials and talking or computerized devices.

## Testing your vision with the Amsler grid

You can check your vision daily by using an Amsler grid like the one pictured here. You may find changes in your vision that you wouldn't notice otherwise. Putting the grid on the front of your refrigerator is a good way to remember to look at it each day.



Amsler grid



To use the grid:

1. Wear your reading glasses and hold this grid 12–15 inches away from your face in good light.
2. Cover one eye.
3. Look directly at the center dot with the uncovered eye.
4. While looking directly at the center dot, note whether all lines of the grid are straight or if any areas are distorted, blurred or dark.
5. Repeat this procedure with the other eye.
6. If any area of the grid looks wavy, blurred or dark, contact your ophthalmologist immediately.



## Resources

For more information, please contact:

**The American Academy of  
Ophthalmology**

415.561.8500

[www.aao.org](http://www.aao.org)

**The American Macular Degeneration  
Foundation**

413.268.7660

[www.macular.org](http://www.macular.org)

**Foundation Fighting Blindness**

800.683.5555

800.683.5551 TDD

[www.FightBlindness.org](http://www.FightBlindness.org)

The American Academy of Ophthalmology is an organization of 29,000 ophthalmologists (Eye M.D.s) dedicated to preserving eye health and sight.

**American Academy of Ophthalmology**

P.O. Box 7424

San Francisco, CA 94120-7424

<http://www.aao.org>

**COMPLIMENTS OF YOUR OPHTHALMOLOGIST**

**Valley Eye and Laser Center, Inc. P.S.  
4011 Talbot Road South, #210  
Renton, Washington 98055  
(425) 255-4250 • 1-800-325-6498**

©2007 American Academy of Ophthalmology  
The American Academy of Ophthalmology, The Eye M.D. Association  
and the Academy logo are registered trademarks of the American  
Academy of Ophthalmology.

051061 10/07

ISBN 978-1-56055-531-5



**AMERICAN ACADEMY  
OF OPHTHALMOLOGY**

*The Eye M.D. Association*